**Supporting Document 2**
**Item 8**

# Staff Report
## for

## *Item 8*
## *Discussion*
## *June 10, 2004*

**To: John H. Robertus**
**Executive Officer**

**From: Paul J. Richter**
**Water Resource Control Engineer**
**Industrial Compliance Unit**

## Tentative Order No. R9-2004-0111
## NPDES Permit No. CA0108952

## WASTE DISCHARGE REQUIREMENTS

## FOR

## SWEETWATER AUTHORITY
## LOWER SWEETWATER RIVER BASIN

## GROUNDWATER DEMINERALIZATION PLANT
## SAN DIEGO COUNTY

**Discussion**

The Sweetwater Authority is a domestic water purveyor serving customers in the cities of Chula Vista and National City and the unincorporated area of Bonita in southern San Diego County. On June 7, 1999, this Regional Board adopted Order No. 99-30, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0108952, for the discharge of up to 0.800 million gallons per day (mgd) of brine concentrate from the Lower Sweetwater River Basin Groundwater Demineralization Plant (Demineralization Plant) to the Upper Paradise Creek Flood Control Channel, a tributary to the Sweetwater River and San Diego Bay.

On January 6, 2000 the Demineralization Plant was placed in service and began operation pursuant to Order No. 99-30. The Demineralization Plant uses reverse osmosis process to demineralize approximately 4.0 mgd of groundwater from four alluvial groundwater wells and six San Diego Formation groundwater extraction/injection wells. The groundwater production wells are located near the demineralization facility or up stream along the Sweetwater River, an ephemeral freshwater river.

The Demineralization Plant is located at 3066 North Second Avenue, Chula Vista, and demineralizes groundwater by using a cartridge filter and reverse osmosis system. The brine concentrate from the reverse osmosis processing system discharges through a 14-inch diameter pipe to the existing concrete-lined Upper Paradise Creek Flood Control Channel. The Upper Paradise Creek Flood Control Channel conveys the brine concentrate to the Sweetwater River at a location in the tidal prism of San Diego Bay.

**Purpose of the Order**

The tentative Order will regulate the discharge of brine water from the Demineralization Plant and the incidental discharges associated with the facility, such as, groundwater well-purge water, plant feed-water, pressure (air) relief valve water, and chlorine contact-tank overflow.

**Water Quality-Based Effluent Limitations (WQBEL)**

The brine concentrate discharge is a continuous discharge. During the reasonable potential analysis review of the chemical concentrations in the discharge it was noted that copper may cause an exceedence of receiving water quality criteria. The tentative Order includes WQBEL for copper for the brine concentrate discharge.

The *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Implementation Policy) requires that discharge effluent limitations be specified as total recoverable concentrations for determining compliance with water quality criteria. Effluent limitations as a total recoverable concentration are also required by 40 CFR 122.45(c). The tentative Order includes effluent limitations as a total recoverable concentration for the brine concentrate discharge.

The discharges from the groundwater well-purge water, plant feed-water, pressure (air) relief valves, and chlorine contact-tank overflow are intermittent and short duration. During the reasonable potential analysis of these discharges, it was noted that copper concentrations are higher than receiving water criteria, but because of the intermittent and short duration these discharges are not considered to have a reasonable potential to cause an exceedence of water quality criteria. The tentative Order does not include effluent limitations for the discharges of groundwater well-purge water, plant feed-water dump, pressure (air) relief valves, and chlorine contact tank overflow. However, monitoring of these discharges is required.

**Metals Translator Study and Interim WQBEL**

Pursuant to section 1.3 of the Implementation Policy, a reasonable potential analysis (RPA) of effluent and receiving water data is required to determine which priority pollutants would require effluent limitations. From the RWD and from the discharger's monitoring data, the copper levels in each of the various discharges were at concentrations exceeding receiving water quality criterion for copper as dissolved, i.e. greater than 3.1 $\mu$g/L (saltwater) or 9.0 $\mu$g/L (freshwater).

Based on the algorithms contained in Section 1.4 (Calculation of Effluent Limitations) of the Implementation Policy an effluent limitation of 3.73 µg/l (total recoverable concentration) was calculated for copper. This limit was based on an EPA default translator (total dissolved-to-total recoverable ratio) of 0.83. Based on historical copper sampling data (total recoverable) conducted by the discharger it appears that that the discharger may not be able to comply with the 3.73 µg/l total recoverable copper limitation. Pursuant to section 1.4.1 of the Implementation Policy, the discharger may request to conduct a *Metals Translator Study* to determine a site-specific translator for copper concentrations that would be used instead of the default value of 0.83. The site-specific translator would then be used to calculate a more representative total recoverable effluent limitation for copper. It is possible that the site-specific translator may not necessarily render a total recoverable effluent limitation for copper that is less stringent than the current limitation of 3.73 µg/l.

To complete a request for the translator study, the discharger must (1) commit to (a) completing a defensible site-specific translator study and (b) proposing a dissolved to total recoverable translator and (2) describe the methods to be used in developing the translator prior to the adoption of the tentative Order. The discharger may use the guidance specified in *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion, EPA 823-B-96-007, June 1996*, or an equivalent study format.

Upon evaluation of the proposed dissolved to total recoverable translator, the tentative Order may be modified by the Regional Board. The Implementation Policy and the CTR allow the use of alternative conversion factors for discharges.

By letter dated April 26, 2004, the discharger requested consideration to allow them to perform a translator study. The discharger's April 26th letter did not contain the details required in *Interim Effluent Limitations C* in the tentative Order or as specified by section 1.4.1 of the Implementation Policy. The tentative Order allows the discharger to conduct a translator study provided they comply with the requirements of Section 1.4.1 of the Implementation Policy prior to the adoption of the tentative Order.

**Availability of the tentative Order**

The tentative Order was mailed on May 7, 2004, 34 days prior to today's meeting.

**Comment letters**

As of May 25, 2004 we have not received any comment letters regarding the tentative Order. By telephone, the discharger informed us that they will try to provide a work plan for a translator study prior to the Regional Board's June 10, 2004 meeting.